

SECTION 6. That Article VI, "One and Two Family Dwelling Code", is hereby repealed and re-enacted with amendments as follows:

## **ARTICLE VI. ONE AND TWO FAMILY DWELLING CODE**

### **DIVISION 1. GENERALLY**

#### **Sec. 5-96. Scope.**

This article shall govern the minimum requirements to safeguard the health, safety, and welfare of the public by regulating and controlling:

- a) The design, construction, prefabrication, equipment or appliance installation, quality of materials, use and occupancy, and the repair of one (1) and two (2) family detached dwellings and townhouses not more than three (3) stories in height with or without a loft per Section R101.2.1; and
- b) New Construction, Additions and Alterations as defined in Section R202.

Alterations to existing buildings that do not meet the definition of New Construction or Addition, shall comply with Article XIII. New Construction as defined in Section R202 shall also comply with the provisions of Article XIV.

**Secs. 5-97 – 5-100. Reserved.**

### **DIVISION 2. ADMINISTRATION AND ENFORCEMENT**

#### **Sec. 5-101. International Residential Code for One and Two-Family Dwellings--Adopted.**

The International Code Council (ICC) International Residential Code for One and Two-Family Dwellings, 2009 Edition, as modified herein, is hereby adopted as the residential code for the City. One (1) copy of such publication as adopted shall be maintained by the City Clerk in the office of the Council and made available for inspection by the public during regular office hours. Any amendment or change in such publication promulgated by the International Code Council shall not become a part of this article until adopted by ordinance. References to other ordinances and codes of the City shall be interpreted and applied in accordance with the terms and effect of such ordinances and codes at the time of such application and interpretation.

#### **Sec. 5-102. Same—Amendments.**

The ICC International Residential Code for One and Two-Family Dwellings, 2009 Edition (IRC), is amended as follows:

Section R101.1 of the IRC is amended to read as follows:

**R101.1. Title.** These provisions shall be known as the *Residential Code for One- and Two-family Dwellings of City of Rockville*, and shall be cited as such and will be referred to herein as “this code”.

Section R101.2.1 is added to the IRC to read as follows:

**R101.2.1 Additional scope and repairs. Accessory structures and** townhouses with loft, not exceeding a total of four stories in height and meeting the requirements of Sections R309, R310 and R311 and other applicable requirements of this Code. Repairs involving building structures existing at the time of adoption of or amendment of this Article shall comply with this Article or Article XIII.

Section R105.2 of the IRC is amended to read as follows:

**R105.2 Work exempt from permit.** Permits shall not be required for the following, however properties in Historic District Zones require “Certificates of Approval (permits)” for exterior alterations. Exemption from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction.

**Building:**

1. Retaining walls that support a surcharge of less than 2 feet in height, as measured from the lower grade level to the grade level on the high side of the wall.
2. Water tanks supported directly upon grade if the capacity does not exceed 5,000 gallons (18,927 L) and the ratio of height to diameter or width does not exceed 2 to 1.
3. Sidewalks and driveways not more than 30 inches (762 mm) above adjacent grade and not over any basement or story below.
4. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.
5. Prefabricated swimming pools that are less than 24 inches (610 mm) deep.
6. Swings and other playground equipment accessory to a one-or two- family dwelling.
7. Window awnings supported by an exterior wall which do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.
8. Re-roofing or residing an existing home without removing any structural components.
9. Patio/decks that are not greater than 4” in height above ground level, Height is measured from top of patio/decking to ground at lowest point.

**Electrical:**

1. Listed cord-and-plug connected temporary decorative lighting.
2. Reinstallation of attachment plug receptacles but not the outlet therefore.
3. Replacement of branch circuit overcurrent devices of the required capacity in the same location.

4. Electrical wiring, devices, appliances apparatus or equipment operating at less than 25 volts and not capable of supplying more than 50 watts of energy.
5. Minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.
6. Removal and replacement of stoves, disposals, ranges. Lighting fixtures, or similar appliances and equipment, not to include base board heaters.

**Gas:**

1. Portable heating, cooking or clothes drying appliances.
2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
3. Portable-fuel-cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

**Mechanical:**

1. Portable heating appliances.
2. Portable ventilation appliances.
3. Portable cooling units.
4. Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.
5. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
6. Portable evaporative coolers.
7. Self-contained refrigeration systems containing 10 pounds (4.54 kg) or less of refrigerant or that are actuated by motors of 1 horsepower (746 W) or less. (Window AC units).
8. Portable-fuel-cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

**Plumbing:**

1. The clearing of stoppages or the removal and reinstallation of fixtures (i.e., water closets), provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.
2. The stopping of leaks in drains, water, soil, waste or vent pipe; provided, however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in this code.

*Section R105.3.1.1 of the IRC is deleted.*

*Section R105.5* of the IRC is amended to read as follows:

**R105.5 Expiration.** Every permit issued shall become invalid unless the work on the site authorized by such permit is commenced within six (6) months after its issuance, or if the work authorized by such permit does not continue to progress or is abandoned for a period of six (6) months after the last approved/valid inspection. Before such work recommences, a new permit shall be first obtained and the appropriate fees shall be paid.

The fees shall be one-half the amount required for a new permit for such work, provided no changes have been made or will be made in the original construction documents for such work.

*Section R105.5.1* of the IRC is amended to read as follows:

**R105.5.1 Extensions.** The code official can extend the time for action by the permittee if there is reasonable cause. A permittee holding an unexpired permit shall have the right to apply for an extension, in writing, for time to complete such work. The extension shall be requested for a justifiable cause. A permit shall not be extended more than once.

*Sections R106.1.3 and R106.3.3* of the IRC are deleted.

*Section R107.1* of the IRC is amended to read as follows:

**R107.1 Temporary structures.** The Building official is authorized to issue a permit for temporary structures. Temporary structures are those used for only limited duration events or outdoor recreational purposes, and not as carports, garages, or storage rooms. Temporary structures may be erected for a period not to exceed a total of 90 days in any 12-month period. The size and location of temporary structures must meet the requirements of Chapter 25 (Zoning) of the Rockville City Code. Temporary structures of less than 144 square feet in area are exempt from permit, but must meet all other requirements of this section and of Chapter 25 (Zoning) of the Rockville City Code.

*Sections R109.1.1 and R109.1.2* of the IRC are amended to read as follows:

**R109.1.1 Foundation inspection.** Includes footing inspection, foundation walls, waterproofing, drainage, and back-fill, and ground floor slab. A wall check (house location survey) must be prepared and certified by a Maryland Registered Land Surveyor and submitted for approval to the building official within the time specified by the Division. Framing inspections will not be conducted until such survey is received and approved.

**R109.1.2 Plumbing, mechanical, gas and electrical systems inspection.** Rough inspection of plumbing, mechanical, gas and electrical systems shall be made prior to concealment, to building framing/close-in inspection and as often as required by the applicable code document

*Section R109.1.3* of the IRC is deleted.

*Section R109.1.4* of the IRC is amended to read as follows:

**R109.1.4 Frame and masonry inspection.** Inspection of framing and masonry construction shall be made after the roof, masonry, all framing, fire stopping, draft stopping and bracing are in place and after the plumbing, mechanical and electrical rough inspections are approved. Floor framing located 36 inches or closer to the ground must be inspected prior to installing any flooring materials. An inspection is required for masonry fireplaces after the fireplace and first flue section are completed.

*Section R109.1.5* of the IRC is amended to read as follows:

**R109.1.5 Other inspections.** In addition to the inspections listed above, the building official may make or require any other inspections to ascertain compliance with this code and other laws enforced by the Division.

*Section R109.1.5.2* of the IRC is amended to read as follows:

**R109.1.5.2 Insulation and Radon Control.** Inspections of all required insulation and radon control features must be conducted prior to concealment.

*Section R109.2* of the IRC is deleted.

*Section R109.4* of the IRC is amended to read as follows:

**R109.4 Approval required.** Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the building official. The building official upon notification, shall make the requested inspections and shall either indicate the portion of the construction that is satisfactory as completed, or shall notify the permit holder or an agent of the permit holder wherein the same fails to comply with this code. Any portions that do not comply shall be corrected and such portion shall not be covered or concealed until authorized by the building official. Any required inspections disapproved twice for the same violation will be subject to re-inspection fees adopted by resolution of the Mayor and Council. Re-inspection fees must be paid before any further inspections can be performed at the building site. Any work done without proper inspections will be subject to special inspection fees as adopted by resolution of the Mayor and Council.

*Section R110.1* of the IRC is amended to read as follows:

**R110.1 Use and occupancy.** No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made until the building official has issued a certificate of occupancy. Issuance of a certificate of occupancy shall not occur until the building has been inspected and found to be in compliance with the provisions of this code and all other applicable laws and ordinances. Temporary certificates of occupancy will not be issued for one and two family dwellings.

**Exceptions:**

1. Certificates of occupancy are not required for work exempt from permits under Section R105.2.
2. Accessory buildings or structures.

*Sections R110.2 and R110.3 of the IRC are deleted.*

*Section R110.4 of the IRC is amended to read as follows:*

**R110.4 Temporary occupancy.** Temporary certificates of occupancy will not be issued for one and two family dwellings.

*Section R112 of the IRC is amended to read as follows:*

**R112.1 Administrative Appeals.** Any person aggrieved by and desirous of challenging a decision of the administrative authority in connection with the interpretation, application, or modification of any provision of this chapter relating to the manner of construction or materials used in connection with the erection, alteration, or repair of a building or structure or system installed therein, shall appeal such decision to a Board of Adjustments and Appeals. An appeal may be taken when it is claimed that:

- (1) The true intent of the code or the rules legally adopted there under have been incorrectly interpreted; or
- (2) The provisions of the code do not fully apply; or
- (3) An equally good or better form of construction can be used.

**R112.2 Application for appeal.** An appeal shall be filed with the City Clerk within seven (7) calendar days from the date of the administrative decision being appealed, and a copy thereof shall be submitted to the Chief of Inspection Services. The appeal shall be in writing and shall contain a detailed statement of the reasons in support of such appeal.

**R112.3 Membership.**

**R112.3.1. Number.** The Board of Adjustments and Appeals shall consist of three (3) persons:

- a) A licensed professional engineer or architect chosen by the administrative authority;
- b) A licensed professional engineer or architect chosen by the owner of the subject building or structure; and
- c) A licensed professional engineer or architect to be jointly chosen by the other two (2) members.

**R112.3.2 Compensation.** All fees charged by the licensed professional engineers or architects to serve on the Board shall be paid for by the person appealing the administrative decision.

**R112.4 Meetings and Hearings.** The Board of Adjustments and Appeals shall conduct a hearing on the appeal, at which time the appellant, the appellant's representative, representatives of the City who have inspected the subject building or structure or applicable system installed therein, and any other person having knowledge of the matter or whose interests may be affected by the decision on the appeal shall be given an opportunity to be heard. The hearing shall be conducted informally, and the formal rules of evidence shall not apply. The Board may accept written testimony and shall give it such weight as it deserves.

**R112.4.1 Interpretation.** Interpretation given provisions of the applicable ICC or NFPA Code by the International Code Council or National Fire Protection Association, shall be given great deference.

**R112.4.2 Actions.** The Board may inspect the structure or building and conduct any other investigation or research necessary in order to render a decision.

**R112.5 Decision.** The following process shall be followed:

- (1) Within fifteen (15) working days of the hearing, the Board shall affirm, modify or reverse the decision of the administrative authority.
- (2) The agreement of any two (2) members of the Board shall constitute the decision of the Board. Failure to obtain the agreement of any two (2) members of the Board shall constitute a denial of the appeal and an affirmation of the decision of the administrative authority. The Board's findings and decision shall be rendered in writing and copies thereof shall be provided to the appellant and any other party who has entered their appearance before the Board and requested a copy of the decision. The decision may contain recommendations for remedial steps to be taken to meet the intent of the applicable code.

**R112.6 Appeal.** Any person aggrieved by a decision of the Board of Adjustments and Appeals may appeal the decision to the Circuit Court for the County in accordance with the Maryland Rules as set forth in Title 7, Chapter 200.

*Section R114.1* of the IRC is amended to read as follows:

**R114.1 Notice to owner.** Upon notice from the building official that work on any building, structure, electrical, gas, mechanical or plumbing system is being done contrary to the provisions of this code or in an unsafe and dangerous manner, such work shall be immediately stopped. The stop work order shall be verbal or in writing and shall be given to the owner of the property, or to his agent, or to the person doing the work, and shall state the specific violations and the conditions under which work will be permitted to resume.

*Section R202 Definitions* of the IRC is hereby amended by adding and amending definitions as follows:

**ACCESSORY BUILDING.** A building subordinate to, and located on the same lot with a main building, the use of which is clearly incidental to that of the main building or to the use of the land, and which is not attached by any part of a common wall or common roof to the main building.

**ACCESSORY STRUCTURE.** A structure, the use of which is customarily accessory to and incidental to that of the dwelling(s) and which is located on the same lot. Coated fabric type materials, woven or non-woven cloth, or fabric/ textile materials cannot be used in the construction, installation and/or assembly of any permanent accessory structure for which a permit is required. This includes but is not limited in scope to the following materials: Polyvinyl (PVC) coated, polyester coated, rubber or neoprene coated, nylon coated, polyurethane coated, vinyl coated/laminated material.

**ADDITION.** A modification to an existing building which increases the gross floor area by ~~up to 110% of the existing gross floor area, but not to exceed 1,500~~ not more than 2,000 gross square feet. Any increase in building height or lot coverage is subject to current zoning standards.

**ALTERATION.** Any construction or renovation to an existing structure other than repair or addition that requires a permit. Also, a change in a mechanical system that involves an extension, addition or change to the arrangement, type or purpose of the original installation that requires a permit. Properties in Historic District Zones require "Certificates of Approval" from the Historic District Commission for all exterior alterations.

**COOL ROOF RATING COUNCIL.** The independent, non-profit organization that maintains a third-party rating system for radiative properties of roof surfacing materials.



**ENERGY STAR.** The joint program of the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy designed to identify and promote energy-efficient products and practices.

**FAMILY.** An individual , or two (2) or more persons all of whom are related to each other by blood, marriage, domestic partnership, adoption, guardianship or other duly authorized custodial relationship, or a group of not more than five (5) persons all of whom are not related to each other by blood, marriage, domestic partnership, adoption, guardianship or other duly authorized custodial relationship, living together as a single housekeeping group in a dwelling unit.

**NEW CONSTRUCTION.** New construction and any change to an existing building which exceeds the definition of an Alteration or Addition as defined herein. Construction meeting the definition of 'New Construction' will require a Single Family Dwelling (SFD) permit.

**ONSITE RENEWABLE ENERGY SYSTEM.** Includes, but is not limited to, photovoltaic panels, solar thermal collectors and wind systems located on or directly adjacent to the building site.

**TOWNHOUSE LOFT.** An additional story in one-family townhouses contained between the roof eaves and ridge, which may contain habitable rooms and does not exceed sixty percent(60%) of the floor area below.

**VEGETATED ROOF.** A layer of vegetation growing in a medium on top of a drainage layer and a synthetic, waterproof membrane on the roof of a structure.

Table R301.2 (1) of the IRC is amended to read as follows:

**TABLE R301.2(1)**

**CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA**

GROUND SNOW LOAD	WIND DESIGN		SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP	ICE BARRIER UNDERLAYMENT REQUIRED	FLOOD HAZARDS	AIR FREEZING INDEX	MEANS ANNUAL TEMP
	SPEED (mph)	TOPOGRAPHIC EFFECTS		WEATHERING	FROST LINE DEPTH	TERMITE					
25	90	NO	B	SEVERE	24"	MODERATE TO HEAVY	13° F	NO	YES	1,000	50° F

Table No. R301.5 of the IRC is amended by changing the minimum uniformly distributed live load for decks to 60 pounds per square foot.

*Section R302.5.1 of the IRC is amended to read as follows:*

**R302.5.1 Opening protection.** Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with either solid wood doors not less than 1-3/4 inches in thickness, twenty-minute fire-rated doors or equivalent. All doors between the garage and dwelling unit shall be self-closing and self-latching.

*Section R302.6.1 of the IRC is added to read as follows:*

**R302.6.1 Separation required in townhouses with loft.** The garage in a townhouse with loft totaling four floors, must be separated from the rest of the dwelling by one hour fire resistance rated assemblies supported by at least one-hour fire protected construction.

*Section R303.3 of the IRC is amended to read as follows:*

**R303.3 Bathrooms.** Bathroom, water closet compartments and other similar rooms shall be provided with a mechanical ventilation system, designed in accordance with the Mechanical Code. Ventilation air from the space shall be exhausted directly to the outside.

*Section R305.1 of the IRC is amended to read as follows:*

**R305.1 Minimum height.** Habitable space, hallways, corridors, bathrooms, toilet rooms, laundry rooms and basements containing these spaces shall have a ceiling height of not less than 7 feet (2134 mm). The required height shall be measured from the finished floor to the lowest projection from the ceiling.

**Exceptions:**

1. For rooms with sloped ceilings, at least 50 percent of the required floor area of the room must have a ceiling height of at least 7 feet (2134 mm) and no portion of the required floor area may have a ceiling height of less than 5 feet (1524 mm).
2. Bathrooms shall have a minimum ceiling height of 6 feet 8 inches (2032 mm) at the center of the front clearance area for fixtures as shown in Figure R307.1. The ceiling height above fixtures shall be such that the fixture is capable of being used for its intended purpose. A shower or tub equipped with a showerhead shall have a minimum ceiling height of 6 feet 8 inches (2032mm) above a minimum area 30 inches (762 mm) by 30 inches (762 mm) at the showerhead.

*Section R306.3 of the IRC is amended to read as follows:*

**R306.3 Sewage disposal.** All plumbing fixtures shall be connected to a sanitary sewer.

**Exception:** Bathtubs, showers, lavatories, clothes washers and laundry trays are not required to discharge to the sanitary drainage system where those fixtures discharge to an approved gray water recycling system as per Appendix O.

*Sections R309.1 and R309.2 of the IRC are amended to read as follows:*

**R309.1 Floor surface.** Garage floor surfaces shall be of approved noncombustible material. The garage floor must be at least four inches below combustible materials and adjacent dwelling floor. The floor must be sloped to facilitate the movement of liquids toward the main vehicle entry doorway.

**R309.2 Carports.** Carports shall be open on at least two sides. Carport floor surfaces shall be of approved noncombustible material. Carports not open on at least two sides shall be considered a garage and shall comply with the provisions of this section for garages.

*Section R311.2.1 of the IRC is amended to read as follows:*

**R311.2.1 Exit door required.** Exit access from a townhouse loft to the exit door must not require vertical travel of more than two stories. Access to habitable levels not having an exit in accordance with this section shall be by a ramp in accordance with Section R311.6-8 or a stairway in accordance with Section R311.57.

*Sections R312.1.1 of the IRC is added to read as follows:*

**R312.1.1 Retaining wall guards.** Retaining walls with a difference in grade level on either side of the wall exceeding 4 feet and within 2 feet of a walk, path, parking lot or driveway on the high side shall have guardrails not less than thirty-six (36) inches in height.

*Section R313 of the IRC is amended to read as follows:*

## **SECTION R313**

### **FIRE SUPPRESSION SYSTEMS**

**R313.1 Automatic Fire Suppression Systems Required.** Complete fire suppression systems shall be installed and maintained in full operating condition, in compliance with the applicable NFPA Fire Code in all attached or detached single family dwellings and townhouses for which building permit applications for new construction, as defined herein, have been submitted to the City of Rockville after September 23, 2002.

~~**R313.2 Other locations required.** Complete fire suppression systems shall be installed and maintained in full operating condition, in compliance with the applicable NFPA Fire Code in the entire dwelling when an addition is added to the existing structure that is greater than 125% of the gross square footage of the existing home, excluding garages and crawlspaces.~~

**R313.3-2 Insulation Value for Sprinkler Piping Protection.** Insulation installed on sprinkler piping, for the protection of freezing, shall have a minimum R-value of 30. Insulation shall not be blown-in or loose fill and shall be installed to prevent the compaction of the insulation.

*Section R314.3* of the IRC is amended to read as follows:

**R314.3 Location.** Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split-levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
4. In each townhouse loft

When more than one smoke alarm is required to be installed within an individual dwelling unit the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

*Sections R315* of the IRC is amended to read as follows:

**R315.1 Carbon monoxide detection and notification.** All carbon monoxide (CO) detectors shall be listed in accordance with UL 2034 and installed in accordance with the provisions of this code and provisions of NFPA 72. Carbon monoxide detectors will only be required when a new Single Family home, Hotel/Motel, Multi-Family Dwelling (Apartment/Condos) or Board and Care Facility, built after January 1, 2008, which relies on combustion of fossil fuel for heat, ventilation, water heaters, or clothes drying operation. Carbon monoxide detectors shall be hard wired (120 voltage) and contain a secondary battery back up.

**Exceptions:** CO detectors would not be required when only a gas cook top or decorative gas appliance is installed.

**R315.1.1 Location.** Carbon monoxide (CO) alarm shall be installed outside bedroom units. Where bedrooms are located on multiple floors the CO detectors shall be located in close proximity to the bedroom area on each floor level.

*Section R319.1* of the IRC is amended to read as follows:

**R319.1 Premises identification.** Approved numbers not less than 5 inches in height and on a color contrasting background shall be provided for all buildings in such a position as to be plainly visible and legible from the street or road to which the property is addressed.

*Section R401.4.1* of the IRC is deleted.

*Section R403.1* of the IRC is amended to read as follows:

**R403.1 General.** All exterior walls, bearing walls, columns and piers shall be supported on continuous solid or fully grouted masonry or concrete footings, wood foundations, or other approved structural systems which shall be of sufficient design to support safely the loads imposed as determined from the character of the soil, and except when erected upon solid rock or otherwise protected from frost, shall extend below the frost line. Minimum concrete compressive strength shall be 2,000 psi. at 28 days. When existing carports and other unenclosed areas are enclosed with walls, continuous footings meeting the requirements of this section must be provided for all exposed slab sides. Accessory buildings over one hundred forty-four (144) square feet in area must be supported on continuous footings meeting the requirements of this section. Minimum sizes for concrete footings shall be as set forth in Table No. 403.1 and Figure 403.1(1). Footings for wood foundations shall be in accordance with the details set forth in Figure Nos. 403.1(2) and 403.1(3).

*Section R403.1.8* of the IRC is amended by deleting the Exceptions.

*Section R404.1.6* of the IRC is amended to read as follows:

**R404.1.6 Height above finished grade.** Concrete and masonry foundation walls shall extend above the finished grade adjacent to the foundation at all points a minimum of 4 inches (102 mm) where masonry veneer is used and a minimum of 8 inches elsewhere.

*Section R406.2* of the IRC is amended to read as follows:

**R406.2 Concrete and masonry foundation waterproofing.** Exterior foundation walls enclosing habitable, usable, or storage space shall be waterproofed with a membrane extending from the top of the footing to the finished grade. The membrane shall consist of 2-ply hot mopped felts, 55-lb roll roofing, 6-mil polyvinyl chloride, 6-mil polyethylene or 40-mil polymer-modified asphalt. The joints in the membrane shall be lapped and sealed with an adhesive compatible with the waterproofing membrane. An engineered waterproofing design may be required by the building official in areas where soil reports would warrant such design.

*Section R406.2.1* is added to the IRC to read as follows:

**R406.2.1. Crawlspace damp proofing.** Exterior foundation walls of concrete construction enclosing crawlspaces without finished floors shall be damp proofed by applying a coat of approved bituminous material to the wall from the footing to the finished grade at the recommended rate. Exterior foundation walls of masonry construction enclosing crawlspaces with finished floors must be made waterproof with membranes extending from the edge of the footing to the finished grade line. The membrane shall consist of either 2-ply hot-mopped felts, 6-mil polyvinyl chloride, 55-

pound roll roofing or equivalent material. The laps in the waterproofing membrane shall be sealed and firmly affixed to the wall.

*Section R506.2.3* of the IRC is amended to read as follows:

**R506.2.3 Vapor retarder.** A 6 mil (0.006 inch; 152  $\mu$ m) polyethylene or approved vapor retarder with joints lapped not less than 12 inches (304 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

**Exception:** The vapor retarder may be omitted:

1. From garages, utility buildings and other unheated accessory structures.
2. From driveways, walks, patios and other flatwork not likely to be enclosed and heated at a later date.

*Section R507* is added to the IRC to read as follows:

## **SECTION R507**

### **WOOD DECKS**

**R507.1 General.** Construction of wood decks shall conform to the following requirements, in addition to other applicable requirements of this Chapter. In the case of unusual or complex design, the stamp of a Maryland registered architect or engineer may be required.

**Exception:** Patio/decks that are not greater than 4" in height above ground level, Height is measured from top of patio/decking to ground at lowest point.

**R507.2 Live Load.** The minimum uniformly distributed live load for wood frame decks shall be sixty (60) psf.

**R507.3 Footings.** The minimum footing size shall be sixteen (16) inches, by eight (8) inches in depth, with the bottom of the footing a minimum of twenty-four (24) inches below grade. Increased size or load factors may require a larger footing as determined by the code official.

**R507.4 Posts.** Four (4) x four (4) posts may be used for decks under ten (10) feet above grade. A minimum post size of six (6) x six (6) must be used for decks ten (10) feet or more above grade.

**R507.5 Attachment.** Decks may be attached to structures by the use of ledger boards bolted to solid dimension lumber, using one-half-inch diameter bolts at not more than sixteen (16) inch intervals. Ledger boards may not be attached directly to plywood, non-dimensional bands, or truss joists. Deck structures may not be attached to building cantilevers or to chimneys.

**R507.6 Joist Hangers.** Joist hangers shall be secured in accordance with the manufacturer's recommendations, including use of special nail type. Manufacturer's recommendations must be on the job site for review by the inspector.

**R507.7 Cantilevers.** Cantilevers shall be limited to a maximum of one-third (1/3) of the adjacent clear span, designed in accordance with standard engineering practices.

**R507.8 Flooring.** 5/4 decking shall be limited to a maximum joist spacing of sixteen (16) inches. Two (2) x four (4) and larger decking shall be limited to a joist spacing of not more than twenty-four (24) inches. Composite and vinyl decking must be installed as per the manufacture installation instructions for attachment and joist spacing.

**R507.9 Stairs.** Stairs shall be constructed using stringers every eighteen (18) inches. The maximum riser height shall be  $7\frac{3}{4}$  inches (196mm), and minimum tread depth shall be 10 inches (254mm). The greatest riser height within any flight of stairs shall not exceed the smallest by more than three-eighths (3/8) inch. The greatest tread run within any flight of stairs shall not exceed the smallest by more than three-eighths (3/8) inch. When risers are closed, all treads may have a uniform projection not to exceed one and one-half (1 1/2) inches.

**R507.10 Handrails.** Handrails meeting the requirements of R311.7.7 shall be installed for all stairs with four (4) or more risers. Handrail posts shall be attached using a minimum of two (2) one-half (1/2") inch diameter bolts per post.

**R507.11 Guardrails.** Deck floor surfaces located more than thirty (30) inches above the floor or grade below shall have guardrails meeting the requirements of Section R312. Composite and vinyl railings shall be installed as per the manufacture installation instruction. Manufacturer information shall be provided on-site for the inspector.

**R507.12 Materials.** All fasteners, hangers, post chairs and other hardware shall be of the type recommended for the preservative wood used. Manufacturer information shall be provided on-site for the inspector.

*Sections R905.1.1 and R905.1.2 are added to the IRC to read as follows:*

**R905.1.1 Cool roof requirement.** Roof coverings for roof slopes less than two units vertical in 12 units horizontal (less than 17-percent slope) for buildings and covered parking shall conform to this section. Replacement, including any change to design or materials, of the roof of a building or structure in a Historic District Zone must be approved by the Historic District Commission. A minimum of 75% of the entire roof surface not used for roof penetrations, onsite renewable energy systems, or vegetated roofing systems shall be covered with products that comply with the following:

1. Have a minimum initial solar reflective index (SRI) of 78, as described in Section R905.1.2; or

2. Comply with the criteria for the U.S. EPA's Energy Star Program Requirements for Roof Products – Eligibility Criteria.

**Exception:**

1. Roofs used to shade or cover parking and roofs over semi-heated spaces or used as outdoor recreation space by the occupants of the building shall be permitted to be either landscaped or have a minimum initial *SRI* of 29. A default *SRI* value of 35 for new concrete without added color pigment is allowed to be used in lieu of measurements.
2. Terraces on setbacks comprising less than 25% of the area of the largest floor plate in the building.
3. Roofs ballasted at a minimum weight of 17 pounds per square foot with limestone or ballast with a solar reflectance of at least 30% shall be permitted to comprise part or all of the 75% required area coverage.
4. Vegetated roofs and onsite renewable energy systems shall be permitted to comprise part or all of the 75% required area coverage.

**R905.1.2 Solar Reflective Index.** The solar reflective index (*SRI*) shall be calculated in accordance with ASTM E1980 for medium-speed wind conditions. The *SRI* shall be based upon solar reflectance as measured in accordance with ASTM E1918 or ASTM C1549, and the thermal emittance as measured in accordance with ASTM E408 or ASTM C1371. For roofing products, the values for solar reflectance and thermal emittance shall be determined by a laboratory accredited by a nationally recognized accreditation organization, such as the Cool Roof Rating Council CRRC-1 Product Rating Program, and shall be labeled and certified by the manufacturer.

*Section R1001.5.2* is added to the IRC to read as follows:

**R1001.5.2 Fireplaces.** New wood-burning fireplaces shall have gasketed doors and outdoor combustion air.

*Chapter 11* of the IRC is amended in its entirety to read as follows:

**CHAPTER 11**

**ENERGY EFFICIENCY**

**Section N1101**

**General**

**N1101.1 Scope.** This chapter governs the design and construction of residential buildings for energy efficiency. Residential buildings shall be designed and constructed in accordance with Chapters 1, 2 and 4 of the International Energy Conservation Code, 2009 Edition as amended per Article VIII of this Chapter of the Rockville City Code.

*Section M1401.1.1* is added to the IRC to read as follows:



**M1401.1.1 Energy Star equipment.** Installed appliances and heating and cooling equipment shall be U.S. EPA Energy Star certified.

*Sections P2601.1 and P2601.2 of the IRC are amended to read as follows:*

**P2601.1 Scope.** Plumbing materials and installation shall conform to the requirements of Chapters 25 through 32 of this Code, and to the requirements of Chapter 5, Article XI, Plumbing Code, of the Rockville City Code. Where there are conflicts between the two codes, the requirements of the Rockville City Code shall prevail.

**P2601.2 Connections.** Plumbing fixtures, drains and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems.

**Exception:** Bathtubs, showers, lavatories, clothes washers and laundry trays are not required to discharge to the sanitary drainage system where those fixtures discharge to an approved gray water recycling system as per Appendix O.

*Section P2602 of the IRC is deleted in its entirety.*

*Section P2705.1 of the IRC is amended to read as follows:*

**P2705.1 General.** The installation of fixtures shall conform to the following:

1. Floor-outlet or floor-mounted fixtures shall be secured to the drainage connection and to the floor, where so designed, by screws, bolts, washers, nuts and similar fasteners of copper, brass or other corrosion-resistant material.
2. Wall-hung fixtures shall be rigidly supported so that strain is not transmitted to the plumbing system.
3. Where fixtures come in contact with walls and floors, the contact area shall be water tight.
4. Plumbing fixtures shall be usable and accessible.
5. The centerline of water closets or bidets shall not be less than 15 inches (381 mm) from adjacent walls or partitions or not less than 30 inches (762 mm) center to center from an adjacent water closet or bidet. There shall be at least 21 inches (533 mm) clearance in front of the water closet, bidet or lavatory to any wall, fixture or door.
6. The location of piping, fixtures or equipment shall not interfere with the operation of windows or doors.
7. Integral fixture-fitting mounting surfaces on manufactured plumbing fixtures or plumbing fixtures constructed on site, shall meet the design requirements of ASME A112.19.2 or ASME A112.19.3.

8. Valves or stops shall be installed in an accessible location for each plumbing fixture to interrupt water supply to the fixture.

*Section P2903.1* of the IRC is amended to read as follows:

**P2903.1 Water supply system design criteria.** The water service and water distribution systems shall be designed and pipe sizes shall be selected such that under conditions of peak demand, the capacities at the point of outlet discharge shall not be less than shown in Table P2903.1. Minimum flow rate required by Table P-2903.1 will be confirmed with fixture faucet/fitting in full open position, at time of final inspection.

*Table P2903.2* of the IRC is amended to read as follows:

**TABLE P2903.2**  
**MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND**  
**FIXTURE FITTINGS<sup>b</sup>**

PLUMBING FIXTURE OR FIXTURE FITTING	PLUMBING FIXTURE OR FIXTURE FITTING CONSUMPTION
Lavatory faucet	1.5 gpm at 60 psi
Shower head <sup>a</sup>	2.0 gpm at 80 psi
Sink faucet	1.5 gpm at 60 psi
Water closet <sup>c</sup>	1.28 gallons per flushing cycle

For SI: 1 gallon per minute = 3.785 L/m,  
1 pound per square inch = 6.895 kPa

- a. A handheld shower spray is also a shower head.
- b. Consumption tolerances shall be determined from references standards.
- c. Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.

*Section P2903.3* of the IRC is amended to read as follows:

**P2903.3 Minimum pressure.** Minimum static pressure (as determined by the local water authority) at the building entrance for either public or private water service shall be 40 psi (276 kPa). Certification of pressure is required for new construction.

Section P2903.7 of the IRC is amended to read as follows:

**P2903.7 Size of water-service mains, branch mains and risers.** The minimum size water service pipe shall be 1 inch. The size of water service mains, branch mains and risers shall be determined according to water supply demand {gpm (L/m)}, available water pressure {psi (kPa)} and friction loss caused by the water meter and developed length of pipe {feet (m)}, including equivalent length of fittings. The size of each water distribution system shall be determined according to the procedure outlined in this section or by other design methods conforming to acceptable engineering practice and approved by the administrative authority:

1. Obtain the minimum daily static service pressure {psi (kPa)} available (as determined by the local water authority) at the water meter or other source of supply at the installation location. Adjust this minimum daily static pressure {psi (kPa)} for the following conditions:
  - 1.1 Determine the difference in elevation between the source of supply and the highest water supply outlet. Where the highest water supply outlet is located above the source of supply, deduct 0.5 psi (3.4 kPa) for each foot (305 mm) of difference in elevation. Where the highest water supply outlet is located below the source of supply, add 0.5 psi (3.4 kPa) for each foot (305 mm) of difference in elevation.
  - 1.2 Where a water pressure reducing valve is installed in the water distribution system, the minimum daily static water pressure available is 80 percent of the minimum daily static water pressure at the source of supply or the set pressure downstream of the pressure reducing valve, whichever is smaller.
  - 1.3 Deduct all pressure losses caused by special equipment such as a backflow preventer, water filter or water softener. Pressure loss data for each piece of equipment shall be obtained from the manufacturer of such devices.
  - 1.4 Deduct the pressure in excess of 8 psi (55 kPa) caused by installation of special plumbing fixtures, such as temperature controlled showers and flush-o-meter tank water closets. Using the resulting minimum available pressure, find the corresponding pressure range in Table P2903.7.
2. The maximum developed length for water piping is the actual length of pipe between the source of supply and the most remote fixture, including either hot (through the water heater) or cold water branches multiplied by a factor of 1.2 to compensate for pressure loss through fittings. Select the appropriate column in Table P2903.7 equal to or greater than the calculated maximum developed length.
3. To determine the size of water service pipe, meter and main distribution pipe to the building using the appropriate table, follow down the selected "maximum developed length" column to a fixture unit equal to, or greater than the total installation demand calculated by using the "combined" water supply fixture unit column of Table P2903.6. Read the water service pipe and meter sizes in the first left-hand column and the main distribution pipe to the building in the second left-hand column on the same row.

4. To determine the size of each water distribution pipe, start at the most remote outlet on each branch (either hot or cold branch) and, working back toward the main distribution pipe to the building, add up the water supply fixture unit demand passing through each segment of the distribution system using the related hot or cold column of Table P2903.6. Knowing demand, the size of each segment shall be read from the second left-hand column of the same table and a maximum developed length column selected in Steps 1 and 2, under the same or next smaller size meter row. In no case does the size of any branch or main need to be larger than the size of the main distribution pipe to the building established in Step 3.

Installation of additional fixtures at an existing building will require evaluation of the size of the water distribution system, as outlined in this section, and an increase in line and meter size if required by the additional fixture demand.

*Section P2904 of the IRC is deleted in its entirety.*

*Section P2905.3 of the IRC is deleted in its entirety.*

*Section P2905.4 of the IRC is amended to read as follows:*

**P2905.4 Water service pipe.** Water service pipe installed underground between the main and the property line and from the property line to the structure to be supplied shall be type "K" copper tubing with sillflox/brazed joints only for sizes up to and including two (2) inches. In case type "K" copper tubing is unavailable, type "L" copper tubing may be used in an emergency when authorized by the City. Water service pipe installed underground and outside of the structure, shall have a minimum working pressure rating of 160 psi at 73° F (1100 kPa at 23° C).

*Table P2905.4 of the IRC is deleted.*

*Section P2905.4.2 of the IRC is amended to read as follows:*

**P2905.4.2 Water service installation.** Trenching, pipe installation and backfilling shall be in accordance with Section P2604. Sewers and water servicing pipe shall be installed below the recorded frost penetration, but in no case less than two (2) feet two (2) inches for sewer and two (2) feet six (6) inches for water. Water-service pipe is permitted to be located in the same trench with a building sewer provided such sewer is constructed of materials listed for underground use within a building in Section P3002.1. When water-service pipes are laid in the same trench with a building sewer, the water-service pipe is placed on a solid ledge at least twelve (12) inches above and twelve (12) inches to one (1) side of the highest point in the sewer line. In no case shall the water-service pipe be less than two (2) feet six (6) inches below grade. If the building sewer is not constructed of materials listed in Section P3002.1, the water-service pipe shall be separated from the

building sewer by a minimum of 5 feet (1524 mm), measured horizontally, of undisturbed or compacted earth or placed on a solid ledge at least 12 inches (305 mm) above and to one side of the highest point in the sewer line.

**Exception:** The required separation distance shall not apply where a water service pipe crosses a sewer pipe, provided that the water service pipe is sleeved to at least 5 feet (1524 mm), horizontally from the sewer pipe centerline, on both sides of the crossing with pipe materials listed in Tables P3002.1(1), P3002.1(2) or P3002.2.

*Section P2905.5.1 is added to the IRC to read as follows:*

**P2905.5.1 Under concrete slabs.** Inaccessible water distribution piping under slabs shall be copper water tube Type M, brass, or cast-iron pressure pipe, all installed with approved fittings or bends. Any material subject to corrosion shall be protected when used in corrosive soils. Joints in copper pipe or tube installed in a concrete floor slab or under a concrete floor slab on grade shall be installed using wrought-copper fittings and brazed joints.

*Section P2905.15 of the IRC is deleted*

*Section P3001.1 of the IRC is amended to read as follows:*

**P3001.1 Scope.** The provisions of this chapter shall govern the materials, design, construction and installation of sanitary drainage systems. Plumbing materials shall conform to the requirements of this chapter. The drainage, waste and vent (DWV) system shall consist of all piping for conveying wastes from plumbing fixtures, appliances and appurtenances, including fixture traps; above-grade drainage piping; below-grade drains within the building (building drain); below- and above-grade venting systems; and piping to the public sewer.

*Section E3401.1 of the IRC is amended to read as follows:*

**E3401.1 Applicability.** The electrical requirements shall conform to the most recently adopted edition of the NFPA National Electrical Code as provided for in Chapter 5 of the Rockville City Code.

*Chapters 35 through 43 of the IRC are deleted in their entirety.*

*Appendix F Radon Control Methods of the IRC is adopted in its entirety.*

*Appendix G Swimming Pools, Spas and Hot Tubs of the IRC is adopted in its entirety.*

*Section AG105.2 of Appendix G of the IRC is amended to read as follows:*

**AG105.2 Outdoor swimming pool.** An outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa shall be surrounded by a barrier, which shall comply with the following:

1. The top of the barrier shall be at least 60 inches above grade measured on the side of the barrier, which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier, which faces away from the swimming pool. An above-ground pool structure may not serve as the required barrier, nor may the barrier be mounted on top of an above-ground pool structure.
2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.
3. Solid barriers, which do not have openings, such as a masonry or stone wall, shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.
4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1-3/4 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1-3/4 inches (44 mm) in width.
5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1-3/4 inches (44 mm) in width.
6. Maximum mesh size for chain link fences shall be a 1-1/4-inch square unless the fence has slats fastened at the top or the bottom which reduce the openings to not more than 1-3/4 inches (44 mm).
7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 13/4 inches (44 mm).
8. Access gates shall comply with the requirements of Section AG105.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism and openings shall comply with the following:
  - 8.1. The release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate; and
  - 8.2. The gate and barrier shall have no opening larger than 1/2 inch (13 mm) within 18 inches (457 mm) of the release mechanism.

9. Where a wall of a dwelling serves as part of the barrier, one of the following conditions shall be met:

- 9.1. The pool shall be equipped with a powered safety cover in compliance with ASTM F 1346; or
- 9.2. All doors with direct access to the pool through that wall must be equipped with an alarm that produces an audible warning when the door and its screen are opened. The alarm must be audible throughout the house during normal household activities. The alarm system may be equipped with a manual means to temporarily deactivate the system for a single opening. The deactivation switch(es) must be located at least 54 inches above the threshold of the door.

*Appendix H Patio Covers* of the IRC is adopted and amended to read as follows:

## **APPENDIX H PATIO COVERS**

### **Section AH101**

#### **General**

**AH101.1 Scope.** Patio covers shall conform to the requirements of this appendix chapter.

### **Section AH102**

#### **Definitions**

**Patio covers.** Permanent one-story structures not exceeding 13 feet (3657 mm) in height. Enclosure walls shall be permitted to be of any configuration, provided the open or glazed area of the longer wall and one additional wall is equal to at least 65 percent of the area below a minimum of 6 feet 8 inches (2032 mm) of each wall, measured from the floor. Openings shall be permitted to be enclosed with (1) insect screening, (2) glass conforming to the provisions of Section R308, or (3) any combination of the foregoing. Plastics (with the exception of multi-wall polycarbonate sheet products used as roofing), canvas, tarpaulin, and other type of fabric or pliable material may not be used in the construction of patio covers. Patio covers must meet the size and location requirements of Chapter 25 of the Rockville City Code.

**Patio structure.** A structure not greater than 3,000 square feet in floor area, and not over fifteen feet (15') in height, the use of which is customarily accessory to and incidental to that of the dwelling(s) and which is located on the same lot. Coated fabric type materials,

woven or non-woven cloth, or fabric/ textile materials cannot be used in the construction, installation and/or assembly of any permanent accessory structure for which a permit is required. This includes but is not limited in scope to the following materials: Polyvinyl (PVC) coated, polyester coated, rubber or neoprene coated, nylon coated, polyurethane coated, vinyl coated/laminated material. Patio structures must meet the size and location requirements of Chapter 25 of the Rockville City Code.

### **Section AH103**

#### **Permitted Uses**

**AH103.1 General.** Patio covers shall be permitted to be detached from or attached to dwelling units. Patio covers shall be used only for recreational, outdoor living purposes and not as carports, garages, storage rooms or habitable rooms.

### **Section AH104**

#### **Design Loads**

**AH104.1 General.** Patio covers shall be designed and constructed to sustain, within the stress limits of this code, all dead loads plus a minimum vertical live load of 10 pounds per square foot (0.48 kN/m<sup>2</sup>) except that snow loads shall be used where such snow loads exceed this minimum. Such covers shall be designed to resist the minimum wind loads set forth in Table R301.2(1).

*Appendix K Sound Transmission* of the IRC is adopted in its entirety.

*Appendix O Gray Water Recycling Systems* of the IRC is adopted in its entirety.

**Secs. 5-103 – 5-110. Reserved.**